The Shady Side of Brain Work.
See page 58.

HEALTH

A WEEKLY JOURNAL OF

DOMESTIC AND SANITARY SCIENCE.

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Lie in three words, HEALTH, PEACE, and COMPETENCE."—*Pope.*

EDITED BY DR. ANDREW WILSON, F.R.S.E. &C.

VOL. XIII.—No. 316. FRIDAY, APRIL 26, 1889. [PRICE TWOPENCE.

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◆ HEALTH ◆

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, APRIL* 26, 1889.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

THE noxious effect of air in places where many persons have been breathing has been attributed hitherto to carbonic acid. Recent experiments, conducted by capable observers, would seem to show that this is an error. It has been found that air copiously impregnated with pure carbonic acid can be breathed with absolute impunity, but that air spoiled by the breathing of human beings contains small quantities of one or several extremely poisonous substances, which Dubois-Reymond calls human poison or *anthropotoxine*, and to which alone the noxiousness of air in unventilated rooms is due. The most recent experiments of French *savants* show that these poisons come from the lungs.

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THIS fact was most strikingly proved by purifying, by means of sulphuric acid, air exhaled by animals, which acid absorbs the lung poisons but leaves the carbonic acid quite unchanged. The air thus purified was breathed without injurious effects, whereas the unpurified air invariably caused the death of the animal which inhaled it. The fact that one can deprive exhaled air of its noxious effect by means of alkalies, which absorb the carbonic acid, is no proof of the poisonousness of the latter gas, for the alkalies cleanse the air from lung poisons too.

READERS who perused the account of Dr. Sargent's experiments on tight-lacing, published in No. 314, HEALTH, will read with interest the details of a series of experiments made by a Russian *savant*, Dr. Boris I. Kianovsky, with the view of ascertaining the influence of tight-lacing on the vital capacity, the movements of the thorax, the energy of inspiration and expiration, arterial tension, pulse, and respiration. The experiments were made on thirty female patients between eighteen and forty-four years of age, of whom twenty-eight were more or less inveterate tight-lacers (eight of them since their eleventh or twelfth year).

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THE following is a summary of his results:—1. The corset lessens respiratory movement of the thorax, and diminishes the vital capacity as well as the force of the inspirations and expirations, the inspiratory movements being particularly affected. 2. The thorax being compressed and the amount of the inspired air being diminished, the corset necessarily gives rise to chronic "oxygen starvation," which is one of the essential causes of dyspnœa and cardiac palpitation on brisk walking (fatigue being soon felt on physical or mental exertion), loss of appetite, faintness, and other kindred symptoms, such as are usually associated with tight-lacing. 3. The arterial tension falls on putting on a tight corset, and in habitual tight-lacers it is generally below the normal standard ("in consequence of arterial anæmia"). 4. The effect of stays on the frequency of the pulse and respiration is well shown by the following experiments.

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THE women were made to run a distance of 980 feet with moderate swiftness without corsets and light-laced, all other conditions being identical. After a run without corset the pulse was found to be 136, 140, and 156, and the respiration 32, per minute. In the same women tight-laced the pulse was found to be 144, 160, and 176, and the respiration 48, 60, 64, per minute. Among thirty-eight wearers of stays, movable kidney was present in eight, habitual constipation or gastro-intestinal catarrh in fourteen, disease of the apex of the lung in six, anæmia in five, hysteria in five.

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DR. KIANOVSKY gives a fairly exhaustive review of the work done on the same subject by Lesshaft and others, and this concludes with the following words:—"I cannot help stating, in conclusion, that I look back both at the work of my predecessors and my own humble contribution with nothing but a sense of bitter and painful regret, for I am conscious that all those labours directed to prove the deplorable effects of

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tight-lacing will yet remain unnoticed or neglected by women for a very long time." What else, adds the *British Medical Journal*, can be expected, when even lady doctors, whose business it is to know the right way in this matter, and who, we presume, try to induce their patients to walk therein, in their own fair persons (it is whispered) do not always practise what they preach?

In a note recently published by Drs. Straus and Dubarry on researches into the duration of life of disease-germs, the authors obtained the following results:—A great number of such germs possess the faculty of living in water for a period more or less long. They therefore do not differ much in this respect from aquatic bacteria. The chemical composition of the water is not of much importance, as these disease-germs live as long in distilled water as in water charged with organic or inorganic matters. These germs do not appear to lose much of their virulent properties in a medium but little charged with nutritive principles, excepting, perhaps, the bacillus of tuberculosis. The following are given as examples:—The bacillus of charbon or splenic fever was found living in water after 131 days, where it formed spores; that of typhoid fever after 81 days; that of Asiatic cholera after 39 days. Even this duration of life is probably not the maximum.

Mr. J. Bland Sutton, F.R.C.S., in an interesting paper, tells us that he has detected rickety changes in the skeleton of man, chimpanzee, orang, gibbon, monkeys of all kinds (but especially macaques), baboons, capuchins, squirrel, lemurs, potto, lions, tigers, hyena, coati, cynictis, bears (*Assyrian sloth, brown*), cats, dogs, binturong, raccoon-like dog, seals, camel, llama, deer, horse, sheep, goats, pigs, babirussa, beaver, porcupine, rabbits, coypu rats, spermophilus, kangaroos, vulpine phalangers, opossums, dasyures, lizards (especially ninutars), emu, ostrich, rhea, and pigeons. Rickets is very common in monkeys living in captivity in London. Nearly half the total number of young monkeys introduced into the Zoological Society's Garden die rickety. The changes develop so rapidly that a capuchin monkey has been known to die in four months.

The clinical features of the disease are the following:—Instead of leaping from rail to rail, fighting, or otherwise displaying feats of agility, the monkey grovels on the floor, and, if pushed, shrieks as though the movement caused pain. By degrees the power of locomotion becomes considerably impaired, the creature displaying signs of paralysis in the lower limbs, accompanied with priapism, incontinence of urine and fæces. The mode of progression is now characteristic. The hinder portion of the body being paralyzed, the monkey is obliged to use the long fore limbs as crutches, and swing the trunk between them. At this stage deformity of the chest is obvious; a well-marked kyphotic curve of the spine is established in severe cases, and the creature presents a very pitiable condition.

A sudden change in the weather, or exposure to a draught of cold air, sets up a slight attack of bronchitis, and as sure as a rickety monkey develops a cough, be it even a slight one, the animal soon succumbs. Mr. Sutton gives sections of the trunk of the monkey explanatory of the symptoms: the lungs become flattened into narrow bands by the yielding of the softened ribs under atmospheric pressure, the right ventricle of the heart is also thinned from the same cause, there is a diminution of the capacity of the abdomen and a crowding of the viscera; the spinal cord is also compressed by a narrowing of the spinal canal.

Original Essays

"Life is not to live, but to be well."—*Martial.*

THE STORY OF CHLOROFORM AND ITS ALLIES.

By Dr. Andrew Wilson.

(Concluded.)

Long before nitrous oxide, or "laughing gas," had been recognized as a safe and reliable means of procuring anæsthesia, or insensibility to pain, physicians had been experimenting with other substances calculated to effect this desirable end. For example, sulphuric ether had long been under trial in this sense. Known simply as "ether," it is prepared by acting upon rectified spirit by sulphuric acid, or vitriol; and is purified by means of lime and distillation. It is a colourless liquid, very volatile, and possessing a hot taste and a somewhat fragrant odour. When poured on the hand it evaporates, and leaves behind a sensation of coldness. About two and a half ounces will usually suffice to render a person unconscious; although, as Dr. Garrod remarks, "in protracted operations the ether employed has been measured by pounds."

Such was the substance which Faraday, as far back as 1818, announced was capable of producing unconsciousness when inhaled. Nothing seems to have come of Faraday's discovery until 1842, when a Dr. Long, of Athens, used ether successfully in the performance of surgical operations. Little was heard of Long's successes; but Dr. Jackson, an American physician, was more successful in ventilating the claims of ether as an anæsthetic. His experiences, as they have been related, were of somewhat curious character. A jar of chlorine gas, which was about to be used in a lecture, met with an accident and was smashed. The fumes of this gas are peculiarly irritating, and Jackson, to counteract their effect, inhaled ether and ammonia. As things turned out, he speedily became unconscious, and on recovering consciousness began to reflect that in ether he had found a new pain-abolisher. Dr. Jackson does not appear to have been acquainted either with Faraday's views or with the experiences of Dr. Long; so that we may credit him with the re-discovery of the anæsthetic properties of ether.

At any rate, Dr. Jackson at once set about vigorously to proclaim the merits of ether as an abolisher of sensibility. As usual, his fight was an up-hill business. Medical tradition is of the most rampant conservative type, and the noble profession of physic had then, as it has still, to learn the evil of that hide-bound policy which looks askance on any attempt at departure from old lines. To call a man a "quack" who pushes forward his science unto fields hitherto unknown is, of course, an easy matter; and any ignoramus, medical or otherwise, can at least shake his head over investigations, the meaning and purport of which he cannot understand. But progress mostly has come by reason of reformers and investigators who were not afraid of hard names or the jeers of the professional crowd. So true is it, that the martyrs and the rejected and despised of one generation are usually the heroes of the next.

Dr. Jackson, therefore, pursued his way undaunted, and, in 1846, persuaded one Morton, a dentist of Boston, to extract teeth under ether. Morton was familiar with the story of nitrous oxide, and was a man apparently

anxious to push ahead in the matter of anæsthetics. He took ether himself, and, satisfied of its safety, administered it successfully to his patients, as we have seen. At the General Hospital of Massachusetts, Morton showed the properties of ether to a medical gathering, and two operations were performed on patients under its influence by two of the hospital surgeons. Even prejudice must give way when brought face to face with facts; and those who scoffed at Horace Wells, in 1844, at Boston because he failed with nitrous oxide gas were forced to recognize that ether had at least claims to their attention as an agent capable of relieving pain. Dr. Bigelow, a famous surgeon of New York, in his turn operated on patients rendered unconscious by ether. One operation was an excision of the lower jaw—a terribly severe measure; the other was an amputation of the thigh. Prior to the use of ether, one can imagine what such operations meant to patients. Shock, pain, and nervous exhaustion, besides discomfort to the surgeon, were all attendant risks. Under ether the patient slept peacefully through the operation, and awoke to find that procedure safely accomplished, and himself possessing a measure of repose and strength materially favouring his recovery and restoration to health.

Dr. Jackson, it may be added, sought at first to conceal the nature of the ether he had used; but chemistry was equal to the task of discovering its composition, and soon ether appeared under its own name in America as a safe anæsthetic.

To this side of the Atlantic the fame of ether soon spread. Mr. Liston, one of the most famous surgeons of his day, used it with success, and made known its merits to English surgery. But a keen-minded, busy spirit in the medical world of Edinburgh had been keeping eyes and ears alert over the question of agents which could abolish pain and permit humanity to pass through its trials in peace. This was Dr. James Young Simpson—afterwards Sir James—who, as early as 1847, had been appointed one of the physicians to the Queen in Scotland. Simpson's special professional work lay in the direction of obstetrics, or midwifery. He was Professor of this subject in the University of Edinburgh. When ether came in vogue, Simpson at once seized upon it as a substance likely to prove of service in his own work. The sufferings and pangs of women in child-birth increase the risk of that process; and painless child-bearing dawned upon Simpson's mind as a desirable possibility of practical medicine. Accordingly, it was not long before he tried ether as an anæsthetic in his practice. He had then the satisfaction of proving its merits, and of seeing pain abolished at the will of the physician. When it is remembered that in midwifery practice many operations may become necessary, it can well be understood that in the hands of the obstetrician ether was likely to possess a value not second to that which it had already assumed in ordinary surgical practice.

Ether, however, was found to possess dangers and disadvantages of its own. It certainly stimulates in place of depressing the heart, but it is apt to cause spasm of the organ of voice; its taste and odour are not over-agreeable; after recovery the patient is apt to exhibit much excitement; and it is very inflammable. From one cause or another the administration of ether was attended in one or two cases by fatal results; and hence Simpson was additionally stimulated to look about for a safer agent. A vast number of substances were examined and tested, but without result. One night, however, as the account goes, Simpson, in company with Mr. Miller, the surgeon, Dr. Keith, his (Simpson's) then assistant Dr. Matthews Duncan (now of London) a certain fluid was duly experimented with. This fluid had long been known to chemists as a kind of curiosity evoked by experimentation in the alcohol group of compounds. Dumas knew it in 1835, Liebig in 1832, and other chemists at even earlier dates. It was a heavy liquid, colourless, possessing a sweetish taste, and exhibiting a pungent, ethereal odour.

When, as a kind of *dernier résort*, Simpson proposed to try this shelved chemical product, it was duly sniffed by the experimenters. The result was astonishing beyond expectation. The whole party became hilarious and light-hearted, and even uproarious; then succeeded drowsiness; and, finally, each member of the party succumbed to the influence of the inhalation, one or two falling with a crash on the floor. Silence reigned supreme, save for the heavy breathing of the insensible medical men. Had a stranger entered the room at this stage of matters, he might well have supposed he was witnessing the concluding stage of some drunken orgie, so helpless, limp, and unconscious in their positions on the floor were the experimenters.

As the effect of the inhalation began to wear off, Simpson, recovering first of all, saw that he had lighted upon an anæsthetic which was of more powerful nature than ether. Looking around, he beheld the vicissitudes of his friends. The situation must have seemed intensely comical. He beheld Dr. Duncan reposing below a chair in a helpless state, his eyes staring into vacuity, his mouth open, his legs most uncomfortably posed, and his breathing of loud and stertorous kind. There was much snoring and loud breathing elsewhere in the room, and then Dr. Keith's legs were observed doing their best to knock a table off its balance, and otherwise to make confusion worse confounded. Gradually, consciousness returned to the party. They compared notes, and from that night of 1847 chloroform took its place as a pain-abolisher of the first rank.

Simpson was not the man to let the grass grow under his feet when he had discovered in this way a substance which appeared to possess many advantages over ether, in its rapid action, its agreeable nature and odour, and its qualities of being more easily administered and of giving rise to less after-excitement in the patient. Besides, Simpson was a many-sided man. He was a fluent speaker, he had the pen of a ready writer, and his position in the medical world in 1847 was more than well assured. When, therefore, he delivered an inaugural dissertation on chloroform in Edinburgh, there was evoked a spirit of inquiry rather than of opposition. Chloroform was received with less suspicion in the Scottish metropolis than had ether, and very soon after 1847 it became thoroughly studied and universally used.

To show the quips and crudities which attended even this matter of purely scientific discovery, it may be interesting to mention that, among other objections (hailing from Edinburgh), was one of a theological nature. A certain section of the clergy, sticking, as is usual still with not a few of the "cloth," more closely to the letter than to the spirit of Scripture, declared that Simpson's use of chloroform in midwifery was a direct contravention of a Biblical law. This law these clerics professed to find in that language of Genesis, which declared to Eve that "in sorrow thou shalt bring forth children." But Simpson was more than a match for the ministers. He remarked, meeting them on their own ground, that it was evident the Creator had foreshadowed the use of anæsthetics, seeing that, in the creation of woman out of the rib of the man, Adam was made to fall into a deep

sleep, so that the creative work was accomplished in the absence of pain.

These days have long passed away, and still chloroform remains to us as one of the greatest of boons which suffering men and women have received at the hands of science. It is not my intention to show how ether and chloroform have been compared, how their respective virtues and disadvantages have been discussed, or how the merits of their combination and of other anæsthetics have been laid before the world of medical science. Suffice it to say that these anæsthetics occupy a foremost place in the ranks of the agents which abolish pain and promote the healing of disease. Their influence on human welfare has been incalculably great. The gift of chloroform to man may well, in respect of its magnitude, be placed beside that peaceful repose of nature which, expressed in the language of the ancient poet, asserts with gratitude that "He giveth his beloved sleep."

Spanish Liquorice.—Spanish liquorice root, which is brought into commerce in very large quantities, partly direct for pharmaceutical purposes, and partly as the raw material for the extraction of juice, is gathered from the wild plant which grows in abundance in the provinces of Toledo and Saragossa. The total annual production of dried root in Spain amounts to about 6,750,000 lbs. Gathering commences in September and continues until March, but the root is not thoroughly dry and fit for shipment until five months after gathering. The first supplies of the new crop are, therefore, as a rule, brought to market in the month of April. From Valencia about one-tenth of the crop—say, 700,000 lbs.—are exported yearly, the United States taking about 275,000 lbs., and the rest being distributed to France, Belgium, and Germany. The Valencia exporters distinguish three grades of liquorice, viz.: "Extra quality," which is exported in sticks of eight inches in length, packed in bundles weighing about 6½ lbs. The second grade, called "Flor," is packed in bundles of about 13 lbs. The outside sticks are fourteen inches long, but the inner sticks of the bundle are much shorter. The third and commonest quality is sent over in bales weighing about 1¼ cwt., in sticks varying from thirty-two inches downwards. The present range of prices in Spain for the three varieties is as follows: Extra, 26s. per cwt.; flor, 21s. 6d. per cwt.; common, 12s. 6d. per cwt. The two better grades are packed in bags, one bag containing twenty bundles; but the third is shipped corded only. The best and the commonest roots are sent to the United States, the medium goods principally to Germany. When the root is cut to the usual bundle-size, the trimmings are collected and sold to the local juice manufacturers.

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Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

CATARRH OF THE STOMACH.

When, in addition to pain or distress in the stomach with flatulence, eructations, acidity, constipation, or diarrhœa, we find the tongue is considerably coated, the trouble is usually catarrh of the stomach. There are various grades of this disease. It may be very slight indeed in its nature, or so serious as to imperil life. What is catarrh of the stomach? It is a condition in which the mucous lining has become thickened, perverted, and secretes mucous and morbid products instead of a clear, pure, gastric secretion. The lining of the stomach becomes "coated, as it were, with the morbid products of fermentation. The secretions being in excess for a long time, become thick, tough, and stringy; and are highly acid and laden with the germs of fermentation.

"Moreover, as a rule, the liver and kidneys are in an abnormal state, and burdened with an immense amount of morbid material. All these vitiated and unhealthy accumulations need to be eliminated from the system. In other words, the lining membrane of the alimentary tract needs to be cleansed and the organs flushed out in order to put them in a healthy condition. Especially is it necessary to remove the bile from the blood and stomach. Every one knows that the effect of a large amount of bile in the stomach of a healthy person is greatly to interfere with the appetite and with the stomach-digestion. If such is its effect on people who are otherwise well, it is not difficult to imagine what its presence means in the stomach of those who are in poor health, suffering from catarrhal diseases of the organ. Hence the importance of freeing the stomach from vitiated offensive mucus and bile by giving to it a rapid action." These words are from an article in the *New York Medical Journal*, by Dr. Van Valzah, and will convey much to the reader's mind.

If one suffering from gastric catarrh is sea-sick, the vomited matter is almost entirely mucus, and its often sour taste characteristic of a healthy gastric juice. By continual accumulation in the stomach, the mucus, as pointed out above, becomes thick, stringy, and a nidus for fermentative germs. This mucus not only indicates the unhealthy state of the stomach, but its very presence impedes the digestive work of the organ. We notice, by the way, some leading text-books in medicine recommend the administration of milk in these conditions.

It is well known that milk absorbs germs about as readily as any substance. It is also known that it curdles into cheesy masses which are indigestible and burden the stomach. It is difficult for one to understand how such an error has crept into treatises by eminent men. If milk is to be taken at all in catarrh of the stomach, it should be predigested with Fairchild's Peptonizing Powders, when dangers and difficulties will be in a measure done away with.

The practical question is how is the mucus in the stomach to be cleared away? To be sure, as it is cleared away more appears; but if a cure is to be effected, means must be employed to keep the stomach clear. The very best agent for this purpose is hot water, a glassful of which should be taken on an empty stomach in the morning, and once or twice during the day. The water can hardly be taken alone by individuals generally, as it is apt to occasion nausea; the addition of a little table-salt is sufficient to render the water sweet, and will make it

acceptable to most people. The water should be about as warm as coffee that is usually taken, and is best sipped, ten or fifteen minutes being occupied in taking it. Breakfast may follow from half an hour to an hour, and should consist of some light meat well chewed and highly nutritious. A sleep of an hour or two after breakfast and an hour after dinner will hasten convalescence, for it should be borne in mind that, oftener than not, catarrh of the stomach is primarily induced by impaired nerve-tone. The manifold demands of civilized life upon the nervous system are the main factors, therefore, in the production of this complaint.

Acidity is frequently present, and makes the stomach feel as if it contained corrosive vitriol. Soda will relieve this, never cure. Potash will not relieve, but will sometimes go far towards helping to cure. Carbonate of Magnesia is very useful, not only as an anti-acid, but also as a laxative.

Once or twice a week a one-grain Calomel Tabloid may be taken, and followed in about six or seven hours by a teaspoonful of light Carbonate of Magnesia in half a glass of water. No important gain can be made until the digestive organs and intestinal canal and overloaded liver have been thoroughly cleared. For those afflicted with constipation, nothing could be so good as the Cascara Tabloid, one every night. After this, when food is permissible, one or two Pepsin Tabloids should be taken after each meal. These will do for the weakened digestive organ when it is unable to act of itself.

There is one nerve-tonic which we should certainly mention, and that is Nux Vomica. Four or five drops of the Tincture of Nux Vomica, in a wineglass of water, three times a day, is a most valuable and potent measure. In addition to all this, reference should be made to change of air. There is hardly a chronic disease which is not benefited by change. Even the victim of cancer finds in this course a new lease of life; and for those with dyspeptic troubles, a sea voyage or an otherwise complete change of life is the most effective therapeutic means that can be prescribed.

HOW TO RELIEVE INSECT BITES.

Said a gentleman the other day, my life the first year in London was simply unbearable, because of the fleas. Multitudes are yearly in the same position as he, for those who in various parts of the world suffer in the warm seasons from the bites of animalculæ are legion. In this country, the fleas—and in America, France, and Spain, the mosquitoes—are the plague of those whose skins are fair or specially tender. It is a strange fact that bugs are attracted by those whom fleas and mosquitoes pass by, and *vice versâ*.

"It need scarcely, perhaps, be said," writes Dr. Bristowe, "that gnats generally select exposed parts of the skin, fleas those regions which are protected by clothing, and that bugs are more indiscriminate in their attacks." This writer adds: "There is no doubt that the bites of insects, especially in children of delicate skin, produce eruptions the source and nature of which are often entirely overlooked. Many attacks of so-called 'stropulus,' 'lichen,' and 'impetigo,' ascribed to dentition, dyspepsia, and other causes, are really due to the operations of the above animals. Mosquito-bites are almost identical with gnat-bites in their effects; they are generally, however, much more numerous and individually more venomous."

The bites of insects affect different individuals very differently. We have seen the back of a hand swollen with one as if with erysipelas. The writer has counted more than 150 flea-bites upon one person, and the occurrence of such bites in a patient with fever has lead to the false conclusion that typhus fever was present. A while ago, a child was brought to us with its body covered with flea-bites—fresh ones as and old—and who was undergoing intense suffering from the itching. The mother was given a box of Vinolia to rub on the body, and reports that it relieved the little one as soon as ever it touched the skin. A large number of patients keep Vinolia by them whenever travelling, and many never are without it. It will relieve the pain and itching from the bites of bees, and so, indeed, will mud. The writer has seen a boy writhing in the pain of hornet-bites relieved by applications of mud in an instant.

A very large class of skin-diseases, it may be noted incidentally, is accompanied by itching, which may always be entirely removed with Vinolia; and in some cases, such as eczema, a cure will generally result.

The harvest-bug is found in autumn-time amid the gooseberries, and in the grass and corn-fields. It imbeds itself in the skin, produces much irritation; but the symptoms it causes pass off in a week. The mite is a tiny red thing, just visible to the naked eye.

The missionaries of Africa tell us of the chigœ, which is said to be a native of South America and the West Indies. It has a proboscis as long as its body. It is perceived with extreme difficulty, and burrows in the flesh of the foot about the nails. We have known female missionaries who were great experts at extracting the chigœ. They employed a needle, and gradually enlarged the orifice by which the animalcule entered.

In the blackheads (acne-spots) found on the face of many people is what is known as the *acarus* (*demodex*) *folliculorus*, recently described and illustrated in these pages. It does not produce or aggravate the disease, but is said to be sometimes fatal to dogs.

Alcohol.—The death-rate in the case of brewers, commercial travellers, and other classes exposed to the temptation of frequent alcoholic drinking is six times greater than in all the other industries combined.

The Zander Institute.—The increasing employment of electricity for curative purposes formed the subject for consideration at a meeting of the British Association of Medical Electricians, held lately at 52, Oxford-street, London, W. The President (Mr. C. B. Harness) read a paper describing the special and successful treatment of a case of a very intractable rheumatic arthritis. Dr. J. F. Leeson gave particulars of instances of irreducible hernia and of hydrocele, in which electricity had been employed with great advantage. Professor Loreau submitted the details of a case in which the same agency, conjointly with Zander's mechanical exercises, had cured writer's cramp. In the latter instance the treatment extended over about a fortnight, during which period the handwriting of the patient, as appeared from the specimens exhibited, had improved very rapidly. A discussion upon various aspects of electricity as an aid to medical treatment took place, and in the course of the evening the President described a specially-constructed statical machine for the treatment of disease by Franklinism.

CHEMICAL ANALYSIS.—Dr. Drinkwater, Lecturer on Chemistry in the Edinburgh Medical School, undertakes the Analysis of Water, Foods, Wall-Papers, and of all other products and articles connected with Household Health and Commercial Interests. Terms on application to Dr. Drinkwater, Chemical Laboratory, 41, Chambers-street, Edinburgh.

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

SLEEPLESSNESS IN INFANCY.

By M. Allen Starr, M.D.,
Professor of Diseases of the Mind and Nervous System, College of Physicians and Surgeons, New York.

While it is true that the doctor is rarely called in to put the baby to sleep (except in his own family), yet a few suggestions regarding sleeplessness in infancy may not be out of place. For very often a little knowledge of a medical kind may be applied even in such a simple task, and when hints will be acceptable to the weary mother. the task proves to be difficult, some practical

How much should a baby sleep? This is not unimportant, because it is useless to attempt to make a baby sleep when he has a right to be awake. During the first week of life the baby will only wake up to nurse, and will fall asleep very soon after his hunger is satisfied. Until he is two months old he should sleep at least twenty-one hours out of twenty-four, and if kept awake he will fret and worry. After that time his waking intervals may become little by little longer, and when he is a year old he does not need more than fourteen hours' sleep daily. During the second year the baby should have at least ten hours' sleep at night, and a nap of two hours in the daytime. The nap will be dropped when he is two and a half or three years old, but if he gets tired and fretful toward afternoon it will refresh him much better than anything else. No child under ten should have less than ten hours' sleep at night, and if kept up late should be allowed to remain in bed in the morning, or urged to take a nap during the following day. There is nothing more important for growth and nutrition than sufficient sleep. But children, like their elders, differ somewhat in their need of sleep, and some may need even more, while others may get along well with less, than the amount here mentioned. Natural inclinations should never be disregarded in the matter.

Sleep is too familiar to need description, but there are some things which occur in sleep which may be mentioned. In the first place, when the child is going to sleep impressions upon the senses have less and less effect, sight failing first, then touch and taste, then smell, and lastly, sound; and after the sensations are suspended then the muscles relax, the respiration becomes slower and deeper, the pulse-beats decrease from thirty to ten beats to the minute, according to age, the temperature falls about a degree, and all the vital functions and secretions go on more slowly. Now there are some practical hints which these facts suggest. Anything which excites those failing senses will keep a child awake, and sounds and odours are more likely to act as excitants when he is nearly asleep, while lights and handling will keep him from getting into a sleepy mood. Walking up and down in a hot lighted room and singing loudly is, therefore, just the way to keep the baby awake. One author says: "I have known nurses who would sit with a wakeful infant under a powerful gaslight till after midnight, and then express surprise that the baby persisted in looking at the flame instead of going to sleep."* To put a child to sleep, it is evident that darkness, rest in one position (that is, in the cradle or crib, with one hand laid upon the baby so that he may know that the mother or nurse is near him), and quiet, or at most a low, monotonous, soothing murmur on three or four notes only rather than a song, will be successful. Every mother knows that the baby will often waken when the song which is being sung is stopped; but the hum or murmur may be made fainter and fainter without arousing him. If the baby is carried about, the heat of the nurse's body and the handling prevent rather than aid sleep. The influence of odours is not to be neglected. You can wake a baby almost as easily by holding a strong perfume near him as you can by making a noise, and much more quickly than by touching him. So if you come into the room diffusing a pungent perfume you must not blame the little one if he awakes. Yet some odours appear to soothe the baby, which explains why he will often drop asleep while nursing, though this is a habit not to be encouraged.

In the second place, when a child is fairly asleep the depth of the sleep increases constantly for the first hour, and the deepest sleep is reached at its end. After that, the sleep is lighter and lighter until the time of waking, for which reason dreams always occur toward morning rather than early in the night. If, therefore, it is desirable for any reason to move the baby after he gets asleep, wait for a half hour, or, better, for an hour, before doing so, for then he will be less likely to wake up when you take him up, or if he does, will go to sleep again at once.

In the third place, regular habits of sleep are as important for children as for adults. If a regular bedtime is observed and enforced from the outset, without exception and in spite of pleading, the baby and the child will feel sleepy and go to sleep easily when the time comes. This matter of habit in the hours of sleep is important. Sailors who watch four hours and sleep four hours are usually able to drop to sleep as soon as they get below, no matter at what time of the day or night. During the four hours of watching they use up a certain amount of nervous energy, which is just about replaced by the succeeding four hours of sleep. A sailor's "day" is eight hours long, with four of day and four of night, and he lives several days to our one. A baby's "day" should be equally short. And this shows that the time of sleep or length of sleep is of less importance than the total amount of sleep in relation to the total amount of waking. The baby needs more sleep than the adult, because he must, during sleep, store up energy for his growth as well as for his little effort, and in the first years the growth is very large. Therefore, from the first month let certain times of sleep be sacred without disturbance, and then when the fretfulness of teething or sickness comes the habit of sleep will be established, and aid you in getting the baby to sleep when he is wakeful. Don't put him to sleep at irregular times for your own convenience. Don't wake him up at irregular times to show him off. If you do, don't blame him later if he wants to stay awake at his own convenience.

Anything will keep a child awake which has the effect of exciting his attention,—thus sounds, sights, or any impression coming into the mind through the senses, or any unnatural sensation, such as sickness or pain, reaching him from his body. Besides these external causes of sleeplessness, an imperfect nutrition of the body, including the brain, may produce an irritation of the mind itself, which acts as an internal cause. When a baby will not go to sleep, one of these two causes may be acting. If you want to put him to sleep, try to remove the causes of sleeplessness.

(To be concluded.)

* *Insomnia and its Causes.* By Dr. Lyman, Chicago.

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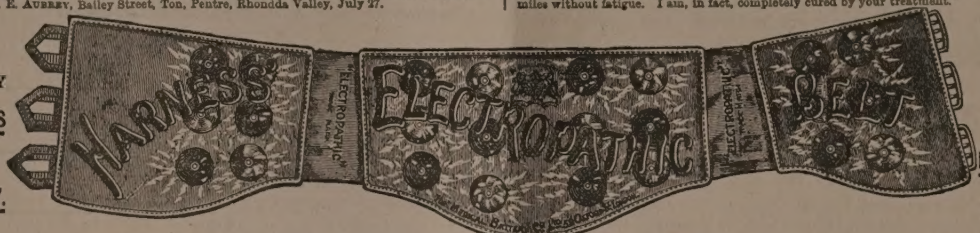

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Healthy Houses

"A happy home must be a healthy home."—*Anon.*

VENTILATING OUR HOMES.

An old writer says: "When men lived in houses of reeds, they had constitutions of oak; when they live in houses of oak, they have constitutions of reeds."

Evidently the truth inculcated is that the better the air and the more bountiful its supply, the healthier is the inmate of a house, be it palace or cottage. Too often the very wealth of a house builder militates against his splendid mansion becoming that ideal home of comfort that it should be, and the inmate of some wretched leaky little hovel, perched on a rocky hill-side, will have every advantage over such a one as regards vigour of body and elasticity of spirits.

Science tells us that there is a needed respiration for the walls of our houses, and that, fortunately for us, whether conscious of it or not, the materials of which our modern houses are made admit of the passage of air in a greater or less degree. Brick, stone, wood, and mortar, solid as they look to us, are easily pierced by that volatile fluid which we call air.

Such is the elasticity of air that, fortunately for us, a slight force only is needed to put and keep it in motion. The difference of 20 degs. Fahrenheit in temperature between out-door air and in-door air will cause the passage of about eight cubic feet of air each hour through every square yard of wall surface made of brick. A plastered wall also admits of the free passage of air, and actually serves as an efficient filter by arresting the progress of dust or any of those particles,—often injurious,—with which the atmosphere is laden.

Heat is the great motor for ventilation, whether natural or artificial, and the great problem in winter is to introduce a sufficient quantity of pure warmed air to make one's room comfortable without attendant draughts that shall imperil the health of their occupants.

Open fire-places, whether the fuel consumed in them be wood or coal, are among the very best ventilators that we have, and yet the question of expense is bringing them more and more into disuse. But there is no need to be discouraged on that score, because the eyes of all practical people are being opened to the importance of combining the twin forces of heat and ventilation in such a manner as shall tend, in the future, to prolong life as well as render it more comfortable and enjoyable.

J. Burns Gibson, Esq., M.A., M.D., writes to Spratt's Patent Limited:—"5, Greenhill Villas, Harlesden, London, November 27th, 1888.—I have had ample and many opportunities o ftesting the value for bodily health and vigour of your Whole Meal Biscuits. For children, I find an almost perfect farinaceous food, containing all the elements of bone, brain, and muscle nourishment. They may be sometimes steeped and soaked with advantage in milk or water; but, eaten as they are sold, they have a very special utility, as teaching and encouraging that most indispensable habit of patient and perfect mastication and insalivation. To adults of constipated habit of body, their use is beyond doubt. This has been proved in my experience. In overcoming the evil habit of 'bolting' food, so common a cause of dyspepsia amongst busy city men and others, they furnish the material of an adequate discipline; while, used by ladies and people of sedentary habits,—say, two or three daily,—I find they obviate the need to have recourse to 'physic.'"—Of all dealers, per tin about 7 lbs., 2s. 9d.; per tin about 14 lbs., 5s. 3d.; or of Spratt's Patent Limited, London, S.E.—[Advt.]

OBSCURE DANGERS OF DRINKING WATER.

The difficulty of detecting the typhoid germ is so great, owing to its form being like that of many other bacteria, and the number of typhoid germs is so small compared with the volume of water and with the multitude of other bacteria usually present, that the isolation and determination of the existence of this microbe in large bodies of water, by culture investigations and the microscope, has thus far proved practically impossible, on account of the many tests required before a cautious investigator would dare to pronounce large volumes of water free from pathogenic microbes.

Some of the worst forms of disease may be wide-spread through a community by means of the water-supply, as was noticeably the case in Plymouth, Pa., and yet both chemical and biological analysis may fail to discern the particular matter which carries the deadly seeds of epidemic. One of the public water-supplies of Plymouth contained a much greater amount of organic matter than the other, but it was the water chemically purest which carried disease and death.

With most waters that are proposed for public supplies, there being as yet no practicable means of saying definitely whether they do or not contain the germs of zymotic disease, all that can be determined with regard to them is, first, whether or not they are so situated with regard to sources of contamination that disease germs are likely to enter the waters, and, second, whether the waters exist under those conditions which are favourable to the multiplication of such pathogenic bacteria as may find their way into them. No waters are absolutely free from danger, but some are far more liable than others to be the carriers of disease.

A water-supply commonly free from the specific germs of disease, but having conditions favourable to their development may, when exposed to contamination, be suddenly invaded by pathogenic bacteria and an epidemic produced. When chemical analysis shows a water to contain excessive quantity of putrescible nitrogenous matter according to accepted chemical standards, such water is objectionable on the ground that this matter may afford the pabulum essential to bacterial development. In the presence of (local) putrefaction, spores are often found in great numbers, even when the general body of the water does not appear impure by chemical tests. For this reason, the occurrence in a stream or body of still water of limited localities, where quantities of organic matter accumulate and putrefy, may create hot beds for the propagation of bacteria, whose myriads of spores may be diffused through great volumes of water of high chemical purity, possibly contaminating the whole mass. The general body of water may not contain sufficient food or be of proper temperature itself to cause the development of the spores or seeds, but if there are pathogenic germs among them, they will develop when drunk by susceptible persons, and become active agents of disease.

The following scholarly letter is vouched for by Dr. Couch, and published in the *American World:* "deer Dock—I have a pashent whos physical sines shows that the windpipe has ulcerated off and his lunges have drop down into his stumick i have given him everry thin without efeckt her fathur is welthy honorable and influenshal as he is a member of assembly and god nose I dont want to lose hym what shal i du ans by return male.—Yours frat.———"

Public Health

"Health is the first Wealth."—*Emerson.*

PUBLIC HEALTH A PUBLIC DUTY.

The address of President Charles N. Hewitt at the sixteenth annual meeting of the American Public Health Association was full of suggestion, and contained many valuable propositions. It was entitled "Public Health a Public Duty," and dealt with the organization, powers, and relations of local, State, and national boards of health. In reviewing the work of the association, and the progress made in sanitary science during recent years, he said:—

As secretary of one of the oldest of the State boards (Minnesota), I had the honour of an election as an original member of this body, and have known its history since. In my own State, beside, I have been missionary at large, and served as the organizer and counsellor of many a local board, and as sanitary inspector and health-officer as well. I have seen our organizations grow from two feeble boards with ill-defined powers, in 1872, to over 14,000, united under a common code of law, with largely increased powers, duties, and funds. There is not to-day in Minnesota a community, however small, without such a board in direct communication with the State board.

The State boards of health have increased from three in 1873 to thirty-one in 1888. Largely through their efforts, popular knowledge and confidence have grown from the tentative methods of the past to the demand for, and more liberal support of, sanitary organization and positive work. More and better legislation, great sanitary engineering works, and a bountiful crop of private enterprises in the same direction, are among the evidences that our field is widening and our responsibilities increasing. We have seen the early examples of efficient State executive organization become a living force in many more of the States and Canada. Various departments of modern science are our willing helpers. Micro-biology has opened up great stores of discovery, and awakened great hopes, which we trust may not fail. We have seen the beginnings of international co-operation for the crushing-out of cholera, yellow fever, and other epidemics, which must in the near future become a beneficent reality, taking its place with arbitration, in international disputes, as the most valuable victories in our century.

The first essential of any sanitary authority, Dr. Hewitt says, is executive power, and its systematic use in the regular and scrupulous performance of every-day duty, as defined in the law and suggested by every-day experience. This almost self-evident proposition is constantly neglected in legislation for organization, and is very frequently violated by boards of health, who seem to favour the popular idea that an exceptional occasion is necessary to the highest exercise of their power, and infectious diseases of the classical type of their selection, with a proper admixture of panic. Panic is no advantage any longer, if it ever was, as a help to sanitary organization and work. Infectious diseases are not the leading causes of our sickness and mortality. It is only in the exceptional severity of plagues like yellow fever, as it has prevailed in Florida, for example, that infectious disease counts the most victims in the sickness or death-roll. That epidemics prevail at all in our time and country is somebody's fault; for if there is one thing more than another that modern hygiene ought to be able to do, it is to forefend their attack, or control them if they effect a lodgement; and boards of health and health-officers have to learn that the most public and pronounced activity, after the invasion of infectious disease, is no substitute for the quiet, unobtrusive work which, in daily faithfulness, would have detected the first case, and controlled its spread.

Another pressing need is a better classification of causes of death, for sanitary purposes, to which should be added causes of sickness and of permanent ill-health from disease. At present, our professional nomenclature is as vague sometimes as the popular one. Cholera-infantum and heart disease are little more accurate than "too weak to live," a common popular cause of death under one year. The general divisions of the English Registrar-General's tables are the best known, but some of the subdivisions are not satisfactory. Isolation has become so important and efficient an aid in the control of many diseases, that it is time to devise some changes in our customary methods which shall ensure more thoroughness, with the least interference with the liberty of the family. It is a serious matter to restrain the bread-winning power of a labouring man or of his self-supporting children; and it is a still more serious matter to shut up a suspected family, sick and well, in a small house, when the removal of perhaps a single patient might save the rest, or some of them. The isolation home, under various names, is the ideal method of us all; but, if we had one always available, people must be educated to its use. We need it most for diphtheria and scarlatina.

Another essential is an apparatus, not too expensive or elaborate, or too heavy for easy movement on wheels, for disinfecting clothing, bedding, and the like, by steam. One to which steam could be supplied by the boiler of a thresher-engine would serve our country districts, and the same could be used where steam boilers are available elsewhere. It could be taken to the infected house, charged, closed, and moved to the nearest available boiler, connected, disinfected, and discharged of its contents with no danger, and at trifling expense. Still another need in this connection is a ready way of disinfecting the sick-room while occupied. Its essential feature should be the removal of the infected air and dust, disinfecting both as they escape, and the introduction of fresh air, so that quantity, temperature, moisture, and movement may be as required by the sick, but all to be done with the most complete protection of the well. The means must be easy, comparatively inexpensive, and available in the average houses of the labouring population. The stove, stove-pipe, or chimney affords the available means in such houses in cold weather. In warm weather the open fire, gas, or kerosene might serve to provide the means for exhausting the foul air and introducing that of the open in its place. Add to the simplest form of apparatus (the open fire or stove-pipe exhaust), cleanliness, fresh air, sunlight, thorough inunction, and boiling water for infected clothing of the sick and attendants, and you have a method almost everywhere practicable, which will reduce the danger from such diseases to the minimum, and the mortality as well.

The very large mortality from non-infectious disease, under five years of age, is, in the light of our present knowledge, no longer tolerable; and boards of health should move now, and positively, for its material reduction. By the last census this mortality was 43·7 per 1,000 of living population for the whole country, while in thirty-one registration cities it was 88·4 per 1,000. The mortality under five years to total of all ages was given as 39·8. The deaths under one year were, for the whole population, 120·9 in 1,000 living, while for the cities it was 267·5. This does not tell the whole story, as the statistics are estimated to fall from 15 to 30 per

cent. below the facts. We have no means of accurately estimating the sickness-rate which accompanies this mortality, but may assume that it is enormous.

Another subject of increasing importance, and which ought to receive the immediate attention of the State boards, is the sanitary relation of certain diseases of animals as communicable to man, notably tuberculosis, and glanders; and the increasing possibility that diphtheria and scarlatina may belong to the same class. The relations of the diseases of the cow to the influence of milk as food are attracting widespread attention, and, as affecting a very important infant food, deserve an attentive study with reference to sanitary control. On this subject popular and certain professional opinion has, as usual, gone to extremes. From the use and even advocacy of distillery-milk, some have come to refuse the purest supply, except after boiling, and their foolishness has been an acceptable and pecuniary advantage to the manufacturers of the proposed "substitutes for cow's milk," which fill our markets and are tried on our children. The importance of the subject has resulted in making the control of infectious diseases of domestic animals one of the duties of the State and local boards of health, as in Minnesota, where the experiment has proved eminently successful and satisfactory.

For the nation and the States, the most urgent lesson is organization and efficient co-operation; for this last experience (of the epidemic of yellow fever in Florida) but adds another to the accumulated evidence of the near past, that no State or province on this continent can afford to be without a board of health officered by experienced men, who have the confidence of the people and Governments they serve; supplied with unquestioned legal authority and sufficient money; and provided with every recognized means for dealing directly, and to the best advantage, with any disease of men or domestic animals threatening, or actually invading, the State. It must also, and for the same reason, have authority and funds to act with similar authorities of other States, in co-operation, for State and national defence. It will not do to forget the established fact, that epidemics are now to be looked upon as evidences of the failure of public health, in organization or administration. That they occur, or spread, is presumptive evidence, when properly qualified authorities exist, that they neglected to take the needed measures, or were unable to take them. I see no escape from this conclusion, except it be shown, in any case, that prevention or control was beyond the resources of our art.

A central State authority, organized and equipped as proposed, will find itself unable to do efficient preventive or restrictive work without thoroughly organized local sanitary authorities in every township, village, and city; and, further, each local board should have the same powers, and proportionate means, as the State board, in the locality it serves. Enforcing the common law, and independent in all purely local administration, the local authorities should be a unit for common purposes, under the State board, of which the control of infectious diseases is a conceded example.

There are now in the United States thirty-one State boards of health. The first was organized in 1869, and others as well, before any attempt at national organization was made. Some of these boards are fully equipped with legal powers and funds for the work we have found laid out for them. The rest, with varying degrees of speed, are coming on to the higher level necessary for efficiency, and all are growing in usefulness and experience.

State boards of health are established and recognized forces to-day; and any national organization attempted must, to be successful, be a development from them in form and function, for the purpose of carrying over to the nation, as a whole, the sanitary succour which the best of the State boards afford to the populations they serve. A national board of health must first supply the national need proved to exist, by the conjoined efforts of the efficiently organized State boards, and fill up the full measure of that work within the national boundaries. So established, in the same dignified relation to the national Government that such State boards bear to the governments of the several States, it is prepared to perform the twofold duty, beyond our borders, which results from our present knowledge of the modes of approach and attack of infectious diseases. It must protect the nation, first, by a thorough knowledge of the character, location, and movements of such diseases abroad; second, by preventing, by the best-known methods, the shipping to this country of infected persons, animals, or things; third, by insisting upon competent sanitary service on board ship, with the best facilities for preventing, controlling, and crushing out any form of infection discovered on the passage out; fourth, by providing that the sanitary authority at the port of entry shall be fully informed of what is known of the sanitary history of the ship and her lading, up to the date of arrival, with later telegraphic report from the American consul and health-officer at the port of departure, if necessary.

It is a fact that to-day, if it will, our Government may learn all that is here proposed, by locating competent health-officers at the foreign shipping ports, whence our greatest danger comes, and might keep the seaboard quarantine authorities fully posted in these important particulars. As to those local authorities, it is time to call a halt in the criticism of their work till all sides in the controversy can be heard; or, better still, till health-officers of inland States can visit and see for themselves. Until the State boards agree in organization and powers, and in proper relations to local boards, the reorganization of the National Health Service upon an efficient and permanent basis will be difficult, if not impossible.

Health Congress at Hastings. — A Congress on Sanitary Science has been arranged for at Hastings, from April 30th to May 4th. The Congress will be held in the Royal Concert Hall, St. Leonards, the president being Dr. B. W. Richardson, and the secretary, Mr. G. Randell. In connection with the Congress a Domestic and Sanitary Exhibition will be opened in the Central Recreation Ground, Hastings, on Monday, April 29th, at 2.30 p.m. The Congress will begin on Tuesday evening, April 30th, at 8 p.m., when an address will be delivered by Dr. Richardson, who will also lecture to the working classes on Saturday night, May 4th, at 8 p.m. The sections include Sanitary Legislation, Municipal Sanitation, and Domestic Health. The business of the Sections begins at 10 each day—that is, on May 1st, 2nd, and 3rd respectively, and evening meetings on these dates have been arranged for. A conversazione will be given by the Mayor and Mayoress on May 1st, and Lord Brassey will give an address on May 2nd, at 8 p.m., while a public dinner will be given on May 3rd, at 7 p.m. Associates' tickets for the Congress are to be sold at 10s. 6d., and ladies are specially invited to attend the meetings. These tickets can be had from the Secretary, at the Royal Concert Hall, St. Leonards-on-Sea.

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When Faith grew doting, and our reason cold,
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SECOND PAPER.

Mesmerism is always the result of suggestion, and is never effected in any other way. If I face a responsive to the wall I can have no effect upon him unless I speak to him. If he is beyond my reach I cannot affect him at all without communicating with him. I believe it is exactly true to say that no wish of a mesmerist ever effected a responsive until that wish was conveyed to him through the senses. Mesmerism is the result of expectant attention. No concentration of the mesmerizer's will without the knowledge of the responsive is followed by any result. Dr. Gilert, in France, has written a good deal, and told many marvellous stories about, "*sommeil à distance*," but I have never been able to obtain any such results under the most favourable conditions. I have mesmerized a good many without touching them, by merely waving my hand, or speaking to them, and I have several times put absent responsives into a sound sleep by writing or telegraphing to them that they would fall into a mesmeric sleep at a certain hour, and this has happened sometimes to their inconvenience. But the sleep was the result of a conspiracy between expectation and acquiescence. If they had not known what I wished, I might have sat in my library and wished till the next century without any response whatever.

For the benefit of those who may desire to experiment, here are certain conclusions derived from my own observations:—

I. About one person in ten can be easily mesmerized. There are no known rules by which to pick out this mesmerizable person in advance, as eligibility extends almost impartially to both sexes and all ages, to blondes and brunettes, and people of all temperaments, to rich and poor, to learned and unlettered, and, it may be added, to obstinate and docile. Professor Carpenter, a most successful expert, thinks that *employés* are a little more tractable than employers, and those under twenty than those over twenty; but his conclusion may have resulted from the obvious fact that young *employés* would be more likely to respond to an invitation from the manipulator to "come forward" than would those of a higher social position, who might see in it a sacrifice of dignity or a loss of consideration.

II. The proportion of people who have the "power" to mesmerize, if it be a power, is still more problematical. But it seems to me what might be called a biological axiom, that no human being possesses any quality different in kind from that possessed, in various degrees, by all other human beings.

III. Mesmerism is a trance, artificially produced, and it appears almost identical with somnambulism, or active sleep.

IV. This artificial sleep, if unaccompanied by exciting episodes, is as harmless as natural sleep. My responsives occasionally come to me in the daytime to be put to sleep for the purpose of obtaining needed rest.

V. If a mesmerized person be left to himself, the mesmeric sleep will, in the course of a few hours, pass into normal sleep, from which he will, in due time, awake refreshed.

VI. Hallucinations that take place under mesmerism are seldom remembered in a subsequent waking state, but they are generally recalled vividly in a subsequent mesmeric state.

VII. The exception to this is that exciting scenes into which responsives are thrown are often recalled after they are awakened. Imaginary shipwrecks and conflagrations are generally thus recalled; and a young lady who, while in a mesmeric trance, was taken where she could scrape up her handkerchief full of imaginary diamonds, sighed deeply on coming to herself, and exclaimed: "Ah! where are the splendid diamonds?"

VIII. Somnambulists are apt to be mesmerizable, and, among responsives, I find those who usually remember their dreams in the morning also recall a larger proportion of trance experiences than those who habitually forget their dreams.

IX. Mesmerized sensitives do not see any of the objects or people in the room except the operator, or hear anything except his voice. They can be made apparently cognizant of their surroundings only by having their attention explicitly called to them by the operator. Even then they generally see imaginary objects only. Their eyes are open, and their sight appears to an oculist entirely normal, but there is no co-ordination of the faculties. If I introduce "a gentleman," they treat him as such; if I introduce him as "a young person," they wonder whether he is a boy or a girl, and are liable to address him as either.

X. It is conceivable that mesmerism might injure an invalid. If he have heart disease, for instance, an exciting or violent episode, a rapture of joy, or a convulsion of great grief or fear, might prove injurious or even fatal, just as it might in his normal condition.

XI. This possibility is abundantly offset by the value of mesmerism as a therapeutic agent. The responsive can be made so intoxicated on water, which he has been told is whisky, as to exhibit all the symptoms of extreme inebriety; can be made disgustingly sea-sick by being told that he is at sea in a storm; and can be at once physically affected by any imaginary medicine. His temperature can be changed, his eye dilated, and his pulse quickened. Mesmerism is as perfect an anæsthetic as ether, and as harmless as water. Any mesmerized person can at once, by a single stroke of the hand, be rendered totally insensible to pain, and can have a tooth drawn, a cataract removed, a cancer cut out, or an arm cut off without feeling the slightest pain. This has been so often demonstrated that amputations frequently take place under its influence in the Paris hospitals, and it is successfully employed in obstetrics. Though only a fraction of patients will be found eligible as candidates for this annihilator of pain, its utility is so obvious it cannot be long before medical societies will take up the therapeusis of mesmerism as a serious study, and army surgeons will be required to have as practical a knowledge of it as of any part of the pharmacopœia.

XII. It is quite erroneous to suppose that the conduct of the responsive is directed in detail by the operator. He only suggests the general line of thought, and each responsive pursues it according to his own knowledge,

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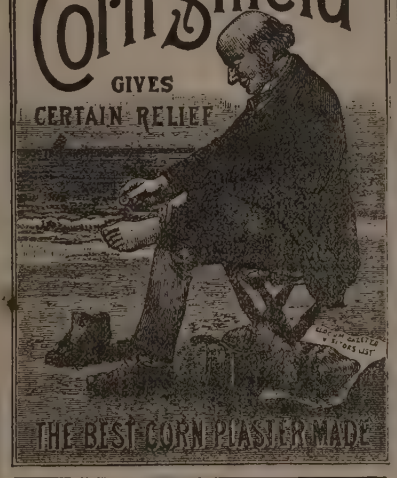

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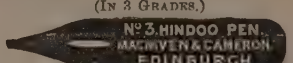

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experience, or prejudices. I say to my responses, for instance, that I have a wonderful educated cow with seven heads. They all want to see it. I call their attention to the imaginary stable-door near by; they look towards it, and, when I snap my fingers, they all see a seven-headed cow enter. Now, by questioning them, it becomes obvious that they all see a different cow. Unless I have designated her colour, one sees a white cow, another a red cow, and so on.

Then I tell them that she can dance—can waltz and keep time with music. I hand one a cane, telling him it is a flute and that he is an eminent performer, and he goes through the motions of playing to the dancing cow. They all hear different tunes, but the exhibition is satisfactory. I now add that the cow can sing—can sing a different part with each mouth—can sing seven ballads at once. At this point there is, perhaps, some incredulity expressed. They see the cow stand up on her hind legs and hear the seven ballads—and this, I may as well add, is the narrative of an actual experiment.

Five of the six mesmerized persons believed that she sang. "She is singing 'Tit Willow,'" said one. "And 'A Warrior Bold,'" said another.

"I hear singing," said the incredulous one, turning to me. "'Annie Laurie,' isn't it? How do you work her?—the machinery, I mean."

The others laughed at him. "Why, the cow sings," said a young lady. "Can't you hear her sing? Can't you see her sing?"

"She looks as if she sang," conceded Incredulous. "I see her mouths move all around. She sounds as if she sang; but she doesn't sing. Cows don't sing."

"Very well, what is it then?" asked one of the others.

"A tube and a hole in the floor," said Incredulous; "or perhaps ventriloquism."

"Aw!" exclaimed the first derisively. "Ventriloquism does not work like that. I've made a study of ventriloquism."

"Well, I've made a study of cow!" persisted the scoffer obstinately.

Sometimes I turn the responsives into children, and have them play school with infinite fun; sometimes transport them over ocean to Africa or Japan on the enchanted carpet, where for a brief space they enjoy all the delights of travel; sometimes we participate in battles, in political campaigns, in exciting tirade; and sometimes Socrates, Moses, or Confucius is introduced and interviewed, the intelligent responsive furnishing both questions and answers in a curious dual action of the mind that is highly entertaining.

Not only the reason sometimes rebels, as above, but the conscience also.

As a rule, responsives can be completely dominated, and made to do anything of which they are physically capable. They could generally be induced to take poison, or jump off the house, or throw themselves under a locomotive, or attack one another with deadly weapons. But there are some exceptions. I was unable to overcome the fear of one of my responsives, whom I sent to assault an imaginary Indian in the Park. He refused to go, and said it was "difficult to kill an Indian."

A young lady, one of the brightest sensitives I have ever seen, steadfastly refuses to play cards. I tell her she is Buffalo Bill, and easily induce her to assume his character, but when cards are suggested, "No, I never play cards. It is wrong!" she says, and I cannot move her. I could make her jump out through the window or put her hand in the fire, but play cards she will not. I was puzzled by it till inquiring, I ascertained that her religious parents had brought her up very strictly, and taught her it was "wicked to play cards."

SOME ODORIFEROUS INSECTS.

Few persons who are accustomed at all to observe natural objects can have failed to notice that many insects are perfumed, or odoriferous. The latter word is perhaps the more applicable, since the odour of many insects is anything but perfume.

In the case of such as live in waste and decaying animal matter, the odour is the result of their food and surroundings; but with many insects there is no such cause for it, and we must suppose that they have been endowed with a special perfume for some useful or necessary purpose. Thus we find many insects which are, apparently, protected from their enemies by their pungent or fetid odour. A small blue and yellow beetle (*Brachinus fumans*) is accustomed, when disturbed, to discharge from its anal opening a cloud of bluish vapour, accompanied by a sharp report, from which it has been popularly named the Bombardier. This vapour, which is a liquid volatized by contact with the atmosphere, has a suffocating smell, and burns the fingers quite severely if the insect is picked up. The large green beetle (*Calosoma scrutator*), which is often to be seen running over sunny places, has a very peculiar fetid odour, as have almost all the other members of that family (*Carabidæ*).

With some insects their perfume seems to be useful as a sexual attraction. As an instance of this may be mentioned the case of a large black wood-boring beetle (*Prionus laticollis*) which possesses a powerful odour very nearly resembling that of musk. The females are more noticeable in this respect than the males, their perfume being so strong as easily to be perceived by a person when several yards distant. The pretty yellow and black striped beetle (*Cyllene robiniæ*), whose grub is so destructive to our locust-trees, has a very strong and peculiar odour, which scarcely resembles any other, unless it be that of phosphorus. The beetles feed in numbers on the Golden-rod (*Solidago*) in September, and very much resemble the striped hornets which are also found there frequently.

The odour of many insects closely mimics that of various vegetable substances. Thus the common brown wasp resembles in smell the vanilla and tonka beans, as do also several species of brightly-coloured tiger beetles (*Cicindelæ*), which run and fly along sunny roads and shores. A large shining bronze beetle (*Osmoderma eremita*), often found in old orchards, has the perfume of a ripe peach, and a little blue and green ground beetle (*Chlænius nemoralis*) that of the butternut. The blackish "squash-bug" (*Corcus tristis*) has an odour somewhat resembling that of the pine-apple. This insect, when disturbed, has a curious way of tilting itself to one side and throwing out a fine spray of volatile, and probably irritating, liquid from pores along its abdomen. It is sufficient in closing to mention one more bug, the *Cimex lectularius*, which, although best known for its blood-loving propensities, has also a peculiar and distinctive odour.

Sick Lady (to Bridget with cards): "Didn't I instruct you to say to any one that called that I was too ill to be seen?" Bridget: "Yis, but shure, mum, I forgot hit entirely; an' oh, mum, they do have such beautiful fall suits on." Sick Lady (rousing herself): "You may say to the ladies, Bridget, that I will be down at once."

Jottings from the Journals

" Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

Dusting.—Although to many people the dusting of a room is a very easy matter, to do this work well requires both time and patience. There is no part of the housework that is so often carelessly done, and there is no part that should be done so well. Some women who pose as excellent housewives are anything but thorough when dusting; they seem to think the time wasted spent in this work, and consequently hurry through it as fast as possible. With a feather duster or a cloth they switch off the dust, going from one thing to another, until all the articles are gone over; then the door is closed, and the room is supposed to be in the best of order. On entering later in the day they are surprised to find the furniture covered with dust, and they wonder where all the dust comes from. If they would think awhile, they would surely know that the dust they switched into the room is bound to settle somewhere, and, of course, the furniture will hold the largest share. There is an old saying that "whatever is worth doing is worth doing well," and in nothing is this more applicable than in dusting. As a general duster, the feather brush is not to be thought of, as it is only fit for the dusting of walls, over doors, pictures, &c., or any place that cannot be conveniently reached with a cloth. It is not to be recommended for the face of pictures or mirrors, as it is apt to scratch the glass. A soft silk cloth makes a nice duster for mirrors and pictures, and for nice, highly polished furniture there is nothing nicer. Scrim makes a nice dusting-cloth, and old calico is used by many in preference to anything else. A damp cloth is the best of all dusters, although many women will not use one on any account, claiming that it injures the polish on the furniture. This objection is absurd, for if the cloth is clean it will not harm the furniture in the least. To be sure, it may remove the gloss; but this can easily be brought back when the surface of the wood is dry by rubbing hard with a dry, soft cloth. The advantage of the damp duster is that, instead of allowing the dust to fly about the room, it takes it all on the cloth, and thereby keeps it from settling anywhere else. Although this kind of dusting may not be generally adopted throughout the house, it should be rigidly observed in an invalid's room, and not on any consideration should any other be adopted. When using the damp duster, only go over a small space at one time; rinse the cloth well and often, and there will be no danger of injuring the woodwork of of the furniture. It is best to use a dry cloth for the piano, as the less dampness about this article of furniture, the better for the tone of it. When using a dry cloth for dusting, shake out of the window frequently, and the dust will not gather so thickly on the cloth as to be shaken off, and let fly about the room. A small paint-brush is kept by many housewives for crevices and ledges, as it is almost impossible to get into these with a cloth. All ornaments should be dusted carefully, particularly those with rough surfaces, as the dust is apt to get in the crevices, and once in it is very difficult to dislodge. For the latter work a stiff tooth-brush will be found to do the work as well as wished, and ought always to be kept for this purpose. Wash out the dust-cloths once a week at the very least. Always have a separate cloth for the fireplace, and never use the duster for this purpose. Use the paint-brush for the window-sashes, and a soft cloth for the panes of glass. Of all things, when dusting do not forget the curtains. If they are of lace, or any of the tapestries, they will collect dust very fast. Undo the loops at the sides, place the lower ends out of the window, and give the whole a good shaking. The shades ought to be taken down frequently and dusted their full length both inside and outside; or, if neglected, they will be soon unfit for use, and no amount of dusting will do any good. To be sure, if they are white they can be laundried, but if coloured there is no remedy for them. A room that is dusted frequently and dusted thoroughly will not need to be swept as often as one that is dusted carelessly.

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Nevada's Natural Soap.—In Nevada are several deposits of mineral soap. One of these has been worked for three or four years. The soap is sometimes made up into cakes as it comes from the mines, but usually it is toned down by admixture with various other soaps. In Dakota and Wyoming are also deposits of natural soap. In regions where soda, borax, and mineral oils abound it is only necessary to bring these ingredients together, and a soap mine is the result. Hot springs assist very materially in uniting and concentrating the materials provided by nature. The soap found about hot springs is therefore generally harder and more perfect than that produced in the dry lakes. The waters of Owens and Mono Lakes are so thoroughly saturated with borax and soda in solution that the addition of any oleaginous matter produces soap. The waters of Mono Lake produce myriads of grubs (which after a time become flies) which are washed ashore, and in some places cover beaches a foot or two in depth. The oily matter contained in the grubs or flies uniting with the alkali in the water of the lake forms a deposit of soap an inch or two in thickness each year. Thus, in the course of ages, a deposit of natural soap of great depth has built up on the east side of the alkali lakes where the worms are stranded—the prevailing winds being from the west. These peculiar grubs are the only living things found in the waters of Mono and Owens Lakes. At certain seasons an insectivorous duck, called the spoon-bill, frequents these lakes, and feeding upon the aquatic flies and grubs, become so fat that they can hardly fly. Hunters kill these spoon-bill ducks for their oil, as the grubs on which they feed impart to them a fishy taste so strong that they cannot be eaten—except by Indians, who eat both worms and ducks. Ducks killed by hunters and lost are sometimes found in the waters of the lake. All the feathers are eaten off the fowls by the alkaline solution, and the layer of fat beneath the skin (an inch in thickness) is found to be changed to soap, hard as the best castile and beautifully white.

HORSFORD'S ACID PHOSPHATE is a gentle, powerful, and agreeable restorative and nourishing agent, and has been found remarkably efficacious in dyspepsia, indigestion, headache, and other diseases arising from indigestion of the food. It tones the feeble stomach, and enables the functions of digestion to be perfected. For nervousness, hysteria, mental exhaustion, tired brain, and sleeplessness it is almost a specific. In cases of weakened energy, impaired vitality, and alcoholism, it restores, invigorates, and rebuilds. For sunstroke and sea-sickness it has proved exceedingly effectual, and it relieves faintness and nausea in a very brief time. For night sweats in consumption its virtues are eminently successful. It makes a delicious drink with water and sugar only, and is a very pleasant and wholesome substitute for lemons or lime juice. Horsford's Acid Phosphate is for sale by all druggists and dealers in medicine.

Sanitary Appliances, Etc.

SPRATT'S BISCUITS.

The firm of Messrs. Spratt Limited, of Henry-street, Bermondsey, London, S.E., has attained a just and wide reputation for the excellence of the food-preparations it has long manufactured. These food-products include articles adapted for human use, and for the nutrition of lower animals. Indeed, as veritable benefactors to the canine race, especially, in respect of their admirable Dog Foods, Messrs. Spratt have been known to all lovers of dogs for many years past. The researches of this firm made in connection with animal foods, and the facilities Messrs. Spratt possess for the manufacture of biscuits and like articles, have led them to prepare special forms of biscuit adapted for human use and nutrition. We have examined and tested samples of their Cabin Biscuits and of their Whole-Meal Biscuits, and are enabled to pronounce both to be of excellent quality, and to be made from the purest and best of materials. As regards the dietetic uses of the Whole-Meal Biscuits, our experience agrees with that of Dr. Gibson, who testifies that, for children, he finds "an almost perfect farinaceous food, containing all the elements of bone, brain, and muscle-nourishment. They may be sometimes steeped and soaked with advantage in milk or water; but, eaten as they are sold, they have a very special utility, as teaching and encouraging that most indispensable habit of patient and perfect mastication and insalivation. To adults of constipated habit of body their use is beyond doubt. This has been proved in my experience. In overcoming the evil habit of 'bolting' food, so common a cause of dyspepsia amongst busy city men and others, they furnish the material of an adequate discipline; while, used by ladies and people of sedentary habits—say two or three daily—I find they obviate the need to have recourse to 'physic.'" These words really express the gist of the matter with reference to the biscuits in question; and in this light, as admirable substitutes for aperients, we recommend them to our readers. The Cabin Biscuits are likewise well made, and thoroughly agreeable to taste. For lunch, or use on board ship, as biscuits that will keep good for any length of time, they are unexcelled.

In respect of that department of their business which deals with canine health and ailments, we may specially particularize Messrs. Spratt's Patent Meat Fibrine Dog Cakes. These are highly nutritious, and dogs can be fed upon them continuously for long periods—a feature not exhibited, as a rule, by the dog-biscuits of other firms. All lovers of dogs should be in the possession of Messrs. Spratt's handy little pamphlet entitled, *Dog Diseases, and How to Cure Them.* In a short space this *brochure* affords a vast amount of valuable information regarding dogs and their ailments, while those who keep rabbits and pigeons may also find many excellent hints contained within its pages.

A Model Kitchen.—It is possible nowadays, says an authority, by spending money lavishly, so to build a kitchen that the most ingenious of servants cannot keep it otherwise than clean. One need not waste upon her unappreciative soul the costly tiles with which one lines the bath-room, but may substitute for them the glazed bricks that are as highly polished, and that will make the floor, the chimney, the walls, if desired, and even the ceiling, as easy to clean as a breakfast plate. Once built, no whitewasher and no painter would be needed for such a room, no smoke need cling to its walls for an instant, and no odour of cooking would be perceptible in it, even if it were used for generations. And the temperature of such a room need not reach the great height unavoidable with plastered walls, which permit the warmth of the chimney to be perceptible through their surface, and thus both the good health and the good temper of the cook would be maintained. As for colouring, such a kitchen may be precisely what one pleases, for the bricks are made in all hues, and they may be laid in patterns or in wide surfaces of one tint from floor to ceiling. Lastly, as such a room would be fireproof, a sliding or swinging iron door would so isolate it that no kerosene-quickened fire and no careless upsetting of lard could bring destruction to the room itself of which a little water would not clear it.

IMPORTANT ANNOUNCEMENT.

COMMENCEMENT OF A NEW VOLUME ON FRIDAY, APRIL 5th.

BONUSES TO SUBSCRIBERS TO "HEALTH."

Health, as our readers are aware, may be obtained of all Booksellers and Newsagents, and at the Railway Bookstalls, on the day of publication. It may also be ordered from the Publisher, 2, Paternoster-square, London, E.C., who will send the journal, post free, for a year, on receipt of postal orders for 10s. 10d.

As many of our readers who live in remote districts prefer to obtain Health from the Publisher direct, and as we are desirous of increasing the already large number of subscribers who give us a yearly order for the journal, we offer the following Free Gifts and Bonuses to all who subscribe to Health for one year or longer:—

(1.) To each Subscriber who remits 10s. 10d. to the Publisher, entitling him (or her) to receive one copy of Health, post free, for one year, we shall present a copy of Dr. Andrew Wilson's work, entitled "A Manual of Health Science" (Longmans & Co.), value 2s. 6d.

(2.) To each subscriber who remits 21s. 8d., entitling him or her to receive two copies of Health weekly, post free, for one year (or one copy for two years), we will present Dr. Richardson's "Ministry of Health" (Chatto & Windus), value 6s. The copies of Health so ordered may be posted to separate addresses.

(3.) To each person who subscribes 32s. 6d., for three copies of Health, post free, weekly, for one year, we will present the volume by Dr. Richardson mentioned above, and also the handsome, illustrated book entitled, 'Studies in Life and Sense," by Dr. Andrew Wilson (Chatto & Windus), value 6s.—being a free gift of the total value of 12s.

The bonus last mentioned will also be presented to anyone who succeeds in obtaining three yearly subscribers to Health, and who remits to the Publisher the sum of 32s. 6d., together with the names and addresses of the persons to whom the copies are to be posted each week.

As the literary gifts above-mentioned constitute books containing solid and reliable information regarding health and other matters of popular scientific interest, it will be seen that the above scheme, while intended to increase our already large circulation, also offers distinct advantages to new subscribers who guarantee by their subscriptions a year's support to this journal. All communications regarding subscriptions and other purely business details connected with Health should be addressed directly to the Publisher, 2, Paternoster-square, London, E.C., and *not to the Editor.*

Good Counsel.—How true it is, as the *Practical Mechanic* says, thousands start well, but never finish one thing at a time. They have a dozen things on hand and no one completed. Time is wasted on unfinished work. Always finish what you begin. One thing finished is worth a hundred half done. The completion of an undertaking yields more pleasure and profit than dozens of plans. The man who is always planning or scheming is rarely, if ever, successful. He often furnishes ideas for others, who go persistently to work and finish what his ideas suggested. "That was my idea—my plan," we frequently hear some one say, but the man who carried it out was the one who benefited himself and others. Do not begin what you cannot finish. What you undertake to do, *do*, and reap the reward of your own ideas and skill. This is good advice both in and out of shop.

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 2, PATERNOSTER-SQUARE, LONDON, E.C. *Those intended for the Publishing Office to be sent to* Mr. A. P. Watt, The Publisher, *at the same address.*

RULES FOR CORRESPONDENTS.

Owing to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the Letter-Box Department of Health, to the following rules:—

1. All questions are answered free of charge in the columns of Health. A limited space only, is available for the insertion of replies each week.
2. All letters must be legibly addressed to "The Editor of Health, 2, Paternoster-square, London, E.C.," *and to no other address.*
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of Health. A stamped addressed envelope must accompany all queries to which a private reply is desired.
4. Addresses of physicians and surgeons will, as heretofore, be forwarded free to Correspondents on their enclosing a stamped addressed envelope for reply.
5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.
6. From the necessity of sending Health to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.
7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

[Owing to postal delay caused by the holiday-season, several replies have been omitted from this number. These answers will appear in next week's Health.]

T. D. Marshall. — Your hair troubles possibly arise from your over-study. Try a tonic such as Fer Bravais, fifteen drops in water, thrice daily, after meals; and use the hair-lotion and treatment recommended to "Labor" in Health, No. 314.

R. E. T.—1. No: take it in plain water. 2. Bayley's Spermaceti Soap, 17, Cockspur-street, Pall-mall, London, S.W.

Hypochondriac.—1. Possibly liver-disturbance only. 2. Indicative of flatulence and nervousness. 3. Irritation of clothes chiefly, or error in dietary. 4. See advice to "Labor" in Health, No. 314. For the relief of the itching use Vinolia as an external application. Take less cheese and coffee; the latter often causes itching of the kind you name. For the rest, try the effect of taking the pill recommended to "Rubor" in Health, No. 312, and let us hear the result of this treatment.

Arthur.—You will probably alter and better all your symptoms if you will take, after your meals, thrice daily, a dessertspoonful of Scott's Pure Cod Oil Emulsion. If you feel chilly in your morning bath, take it tepid, and gradually try it cold as the warm weather comes in. Between your meals you might try a teaspoonful of Inman's Syrup of the Hypophosphites (advertised in our pages), as this will not interfere with the cod liver oil after meals. If not cured, write again.

Rufus Swallow.—There is no need for any further use of drugs in your case. Simply attend to your diet, and take plenty of out-door exercise.

M. A.—Have a pair of boots made on health-principles—that is, strictly to the model of your feet. Write to Mr. Scafe, 21, Albion-street, Leeds, for self-measurement directions and prices of his boots, and you will probably benefit thereby.

F. R.—Follow out advice given to "Arthur" in the present number of Health.

B. D.—The opinion of the lady you quote should not be taken in opposition to that of your medical man. The opinion in question (as you state it) is simply nonsensical. In a case such as that you name, we should feel inclined to advise the taking of bromide of potash in twenty grain doses, one such dose to be taken in water, between meals, thrice daily, when the pain is severe. Hot hip baths will also relieve the symptoms, taken at bedtime, as hot as

"ELECTRICITY IS LIFE."
(TRADE MARK.)

PULVERMACHER'S
WORLD-FAMED
GALVANIC BELTS,

FOR the CURE of NERVOUS DISEASES,
HAVE RECEIVED TESTIMONIALS from
THREE PHYSICIANS to
HER MAJESTY the QUEEN,
THE ACADÉMIE DE MÉDECINE of Paris and
FORTY MEMBERS of the
ROYAL COLLEGE of PHYSICIANS of LONDON.

RECENT TESTIMONIALS.

GALVANISM *v.* NERVOUS DEBILITY.
3, Baltic-place, St. Luke's, E.C., 8th April, 1889.
Gentlemen,—In reply to your kind inquiries as to the efficacy of your Galvanic Bands, I am pleased to state that your treatment in my case has been entirely successful, and if I may judge by my feelings at the present time it is a permanent cure.—Yours truly, S. Wiltshire.
Messrs. Pulvermacher & Co., 194, Regent-street.

GALVANISM *v.* MUSCULAR WEAKNESS.
Builth Wells, Wales, 7th April, 1889.
Gentlemen,—You will be pleased to hear that your appliances have worked wonders for me in my general health. I am as strong as a horse, and am constantly being reminded by my friends of my improved appearance and increased size, having gained so much in flesh and muscle.—Yours faithfully, W. Skinner.
Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* NERVOUS PROSTRATION.
Syston, near Leicester, 3rd April, 1889.
Gentlemen,—I thank you for your kind inquiry as to my health, and I am pleased to tell you that, under the blessing of God, your treatment has been of great value to me, for I am now able to attend to my business again, which was almost impossible before I began to use your Galvanic Bands.—Yours faithfully, J. Sheffield.
Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* RHEUMATISM OF THIRTY YEARS' STANDING.
Quarry Calne, Wilts, March 29th, 1889.
Dear Sir,—Some years ago my husband purchased one of your Galvanic Belts for chronic rheumatism, which quite cured him. The case was a most severe one of thirty years' standing, and my husband was almost a cripple, and could not lift his hands to his head. Before he got your Belt he could not rest day or night, but now he is quite cured, and is never troubled with the rheumatism in the least.—Yours very truly, (Mrs.) S. Weston.
Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS DEBILITY AND MENTAL DEPRESSION.
53, Norton-street, Grantham, March 25th, 1889.
Dear Sir,—You will remember that I had one of your combined Bands a short time since, for nervous debility and mental depression. I am very thankful to say that I have received so much benefit from it that I am now in my ordinary state of health, and shall discontinue wearing the appliance on hearing from you.—Yours very truly, E. Smith.
Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.
St. Stephen's Coombe, Cornwall, 22nd March, 1889.
Dear Sir,—I have very great pleasure in stating that since I began to wear your Galvanic Belt my general health has entirely improved, and I am conscious of more strength and energy to undertake my duties. I feel very thankful for this change, and you are welcome to use my name as one that has derived immense benefit from your treatment.—Yours truly, Jabez Bone.
Mr. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* SLEEPLESSNESS AND INDIGESTION.
26, Wedmore-gardens, Upper Holloway, N., March 21st, 1889.
Gentlemen,—I am very pleased to testify to the great benefit I have received from wearing your Combined Band. I had been suffering for a considerable time from sleeplessness, severe headaches, dyspepsia, &c., and neither medicine nor cessation from business seemed to effect any improvement. I called upon you as a last resource in June of last year, and procured one of your Galvanic Bands, and in a few days I felt relief. I began to sleep better, and the headaches gradually left me, and I have enjoyed better health ever since, and have been able to keep at my business, which I felt totally unfitted for before. I should certainly recommend any one suffering as I did to try one, which I am very thankful I did.—Yours very truly, George J. Haley.
Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.
The distressing symptoms of Nervous Exhaustion and Debility are speedily removed by means of PULVERMACHER'S world-famed GALVANIC BELTS, which are so arranged as to convey a powerful electric current direct to the affected parts, gradually stimulating and strengthening all the nerves and muscles, and speedily arresting all symptoms of waste and decay.

ADVICE PERSONALLY or by LETTER, free of charge.

FOR FURTHER TESTIMONIALS, both Medical and Private, see new Pamphlet, "GALVANISM: NATURE'S CHIEF RESTORER OF IMPAIRED VITAL ENERGY," post free on application to

J. L. PULVERMACHER AND CO.,
GALVANIC ESTABLISHMENT,
194, REGENT-STREET, LONDON, W.
(ESTABLISHED OVER FORTY YEARS.)

can be borne. If these remedies do no good, let a physician accustomed to treat such ailments be consulted, as such symptoms often arise from some slight internal derangement which, as a rule, is easily cured. Write again, if we can be of further service.

G. C. H.—Apply to Mr. Pulvermacher, 194, Regent-street, London, W., and he will furnish you with full details regarding his belts, which should prove useful to you.

Elfie.—Try Bayley's Cure for piles (17, Cockspur-street, London, S.W.) as a simple and effective mode of treatment. See also advice given to "Alfred Day" in the present number.

Frank Hill. — You drink too much tea and coffee. Take Grant's Oat Flour to breakfast each morning instead of tea.

A. F. M.—1. Certainly try Rowland's Macassar Oil: it is a very safe and admirable hair preparation. 2. Bunter's Puriline Tooth Wash should be used night and morning.

A. G. B.—If your doctor has not seen the patient for a month, as you say, it is clear he cannot consider the case a serious one. Why do you not take the advice of a physician in Edinburgh or Glasgow? or why not ask your doctor what he means by his non-attendance? If he has left no specific directions with you, and has "not called for a month," it is clear you are only wasting time by not seeking other advice. If you desire address of an Edinburgh authority, send stamped addressed envelope.

Nimbo.—You have been in the hands of a quack firm. Yours is a case in which your ailments have been exaggerated by your fears. You have only to lead a plain, simple life to retain your health, and the sooner you leave off all drugs and dealings with quacks the better for yourself. Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and follow out the diet and other health-rules it prescribes.

Leith Sufferer.—You are exaggerating your case by your fears and by dwelling on your so-called symptoms. What you name is rather the result of vigour than of ill-health, and you should know this without being told it. Your cure consists in taking plenty of fresh air and exercise, and in living plainly. You suffer from no disease, and therefore do not need to consult a doctor.

Mrs. Melville.—Look to your diet, and see that you rest rigidly after each meal. What you name arises from indigestion. Try also the pills ordered to "Labor" in Health, No. 315.

Pontifex.—The effect of applying Vinolia in your case has really been beneficial, as it has brought out the eruption. Use the Vinolia Soap regularly for washing, and apply the Vinolia itself thereafter; and let us hear how you are in a few days' time.

Orion.—Spray, as a rule, can only affect the larynx. You would be much more likely to affect the lungs by inhalation. Try a Chloride of Ammonium Inhaler (Burroughs, Wellcome & Co.'s), and note the effect of this on the lungs. It is an admirable remedy in catarrh, bronchitis, &c., and can be used for other substances as well.

Misery.—So long as you brood over your troubles (as you are evidently doing) you will not regain your wonted health. You suffer from no disease at all, and the pamphlet you read would inform you of this fact. If you live plainly, and give up worrying yourself (guarding by diet, &c., against constipation), you will get quite well. Otherwise, no advice can better you. It is your mind which is in a morbid state—not your body.

H. Kenny.—Try the effect of taking ten grains of antipyrin in water, between your meals, twice daily. Messrs. Burroughs Wellcome & Co.'s Antipyrin Tabloids (five grains each) may be tried as a handy form of taking the drug.

W. R——d.—Follow the advice given you, and let us hear from you again if you are not cured.

C. Parker.—You must read and carefully study the pamphlet, "A Lecture to Young Men" (post free, 1s. 1d., 5th Edition, from H. Renshaw, 356, Strand, London, W.C.), and follow out the directions as to food, cold sponging, and tonics there prescribed.

Nip.—Try the following mixture: Carbonate of ammonia, one drachm; bicarbonate of potass, a drachm and a half; infusion of chiretta, six ounces. Mix. A tablespoonful thrice daily before food.

Albus.—Try Bayley's remedies (17, Cockspur-street, Pall-mall, London, S.W.), which are advertised in our pages.

Bertie F.—We cannot advise you to try a course of any such treatment. You had better place yourself in the hands of a good physician. We can send you address of such, if desired, on receipt of stamped addressed envelope.

Febrile.—Re-paint and paper the room. This is the only safe course. Fumigate it first with the vapour of burning sulphur (one pound to each 1,000 cubic feet of space), and wash the floors, &c., with Sanitas Soft Soap and hot water; then re-paint.

A. S. M.—Use Sanitas Fluid freely in such a case to the skin and clothes. Use the Powder to the closets and sinks. Sanitas Disinfecting Soap and Cleansing Powder may be used for all the woodwork.

Germ.—Try the effect of taking fifteen grains citrate of potash in a tumbler of water, between meals, twice daily; attend thoroughly to your digestion, and avoid constipation.

Mark L.—Try bathing the parts night and morning with tepid water in which Tidman's Sea Salt has been dissolved, and use brisk friction thereafter with one of Wilson's Hygienic Towels.

Cebus.—Use some of Burroughs' Chlorate of Potash Tabloids, and allow one to dissolve in your mouth occasionally. If this is not sufficient to cure you, write again. Use also Bunter's Puriline preparations (advertised in Health) regularly.

Labourer.—Read the pamphlet entitled "A Lecture to Young Men" (post free, for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and follow out the instructions therein given regarding diet, habits, and the use of tonic measures.

Egeria.—The swelling is due to an enlarged gland, and constitutes *goitre*. You must apply to a good physician, and be guided by him in the treatment of your case. This is your only sure way of receiving benefit.

Cissy.—The heartburn may be relieved by your taking Vichy Pastilles. Another remedy is: Bicarbonate of soda, one drachm; tincture of calumba, six drachms; dill. water, to six ounces. Mix. A tablespoonful to be taken every three hours. Avoid all acids, fruits, sugar, pastry, &c.

Alfred Day.—Take twenty drops of Cascara Cordial in water once or twice daily between meals for a few days. This will relieve your symptoms, and correct constipation, from which piles usually arise. You should thereafter attend strictly to your diet, which should be very light (soups, milk, white boiled fish, poached eggs, milk puddings, stewed fruits, corn-flour, &c., and little solid flesh-meat), but nutritous.

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L. M. N.—Try the Dioxide of Manganese Tabloids (made by Messrs. Burroughs, Wellcome & Co.), to be had from any druggist. Take two of these tabloids as directed on the bottle, after food, twice daily, for three or four days before the period you name.

Juno.—Take Cascara Cordial in doses of twenty drops in water, between meals once or twice daily. Eat Dahl's Cakes, Grant's Oat Flour, stewed fruits, vegetables, and whole-meal bread; and avoid tea and coffee.

Margaret L.—Take twenty drops Cascara Cordial in water, once daily, an hour before breakfast, as a corrective to constipation; look to your food; avoid tea and coffee, and take Scott's Oat Flour in place thereof as a corrective to constipation; eat stewed fruits, and take light diet for a time.

Albert Kerr.—When the pain is severe, take twenty drops of Collis Browne's Chlorodyne in a little water, and repeat this dose in four hours if you are not relieved.

Stirling.—The filter we recommend you to try is that of Messrs. Howie, of Hurlford, Kilmarnock, N.B. It is a thoroughly safe, simple, and reliable filter. See notice in present number.

Edie.—Go to a physician and undergo a thorough examination. This is the only satisfactory method of obtaining a reliable opinion. We can send you address of a physician, if required, on receipt of stamped addressed envelope.

Pink 'Un.—The following hair-lotion should be tried: Quinine sulphate, twenty grains; glycerine, one fl. ounce; Cologne, two fl. ounces; bay rum, two fl. ounces; rose water, eleven fl. ounces. Rub the quinine with the glycerine, and add the other ingredients in order named. The addition of fluid extract of jaborandi is recommended to stimulate the growth. Keep the hair short, and wash it once a week with Bayley's Spermaceti Soap and tepid water.

Bourdalier.—A depilatory is made as follows:—Sulphide of sodium, three drachms; lime, ten drachms; starch, ten drachms. Make a paste with water; apply to the skin for two minutes only; then scrape off. To be used with care. No depilatory will prevent the hairs from growing again. Electricity alone can permanently remove hairs. Send stamped addressed envelope for address of specialist. See article in Health, No. 149.

Ears.—Blow carefully into the ear each morning a little very finely powdered boracic acid—avoid putting any cotton wool into the ear—and, internally, give the child a little chemical food after meals. Avoid colds and chills, of course, and clothe the child warmly.

M. A.—The sebaceous glands of the skin are minute glands which secrete an oily matter. Their function is probably that of supplying a "natural oil" to the skin. Filled up sebaceous glands constitute "blackheads." See Health, No. 149.

Francis Jay.—A remedy for corns may be tried as follows:—Extract of Indian hemp, fifteen grains; salicylic acid, thirty grains; collodion, one ounce. Mix. To be labelled, "For outward use only," and to be applied to the corns with a brush.

Parisienne.—Take a claret-glass of Vin Mariani (Roberts & Co., New Bond-street, London, W.) before your meals, twice or thrice daily, as an excellent tonic for your case; and try a cold or tepid sponge bath each morning.

A. C. M.—We should advise absolute rest before and at the times named. This is in itself a curative measure. In addition, try the effect of giving two antipyrin tabloids (five grains each) every two hours, until six tabloids have been taken, when the pains are severe, repeating these doses next day, if necessary. The tabloids are to be had from druggists, and are made by Messrs. Burroughs, Wellcome & Co., Snow-hill-buildings, London, E.C.

R. Tait.—You should rest after your meals; avoid vegetables; take light foods—soups, milk, white boiled fish, light puddings, &c., for a time, and try Pepsine with your food. If acidity is present, you may try the following:—Subnitrate of bismuth, six grains; carbonate of magnesia, ten grains; powdered gum arabic, twenty grains. Mix to form a powder. Stir in a cup of boiled milk, and, when cool, stir up again before being swallowed. To be taken twice daily after food.

E. A. S.—Try taking fifteen drops Fer Bravais after your food in a little water thrice daily; and take plenty of open-air exercise. If not bettered, write again.

Nip.—Try the effect of taking occasionally five drops of Pure Terebene (Burroughs, Wellcome & Co.'s) on a piece of sugar after your food.

E. Church.—Let the patient wash the parts affected night and morning with Bayley's Spermaceti Soap and tepid water; a little ointment (composed of one part iodoform added to ten parts benzoated lard) to be rubbed on the affected spots after washing, once daily.

E. Heard.—Paint the gland with tincture of iodine until the skin becomes tender, and then cease the painting. Internally, take cod liver oil (to which a little syrup of the iodide of iron has been added by your druggist) after meals, thrice daily. A holiday by the sea would also be likely to do you good.

Atchin.—The trusses of the Medical Battery Company would suit the case you name. They are light and comfortable to wear, but must, of course, be properly fitted to the case. A personal visit should be made to 52, New Oxford-street, W.

S. Preston.—Give the following hair-lotion a fair trial, it acts successfully in cases such as that you describe:—Aromatic acetic acid, one ounce; vinegar of cantharides, two ounces; spirits of rosemary, three drachms; glycerine, one ounce; rose-water, to make up eight ounces. Mix. Label, "The Hair-Wash: rub a little into the roots each night, either pure or diluted with water."

Alfred W.—What you name arises from want of tone. Use Pulvermacher's Belts, regularly; and after meals take Inman's Hypophosphites in a teaspoonful dose in water, twice daily, after meals.

A. Texta.—Of all such salines, Lamplough's Pyretic is by far the best we know. It is a safe family medicine, and contains no excess of alkali or other injurious ingredient.

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